MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

CLASS COST OF SERVICE

APPENDIX 3

UNION ELECTRIC COMPANY,
d/b/a Ameren Missouri

CASE NO. ER-2021-0240

Jefferson City, Missouri
September 2021

** Denotes Confidential Information **

Ameren Missouri's
Response to MPSC Data Request - MPSC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0104.8

Please refer to attached email chain. Please provide any presentations given or files shared in the meeting referenced in Mr. Hickman's 2/2/2021 email. Please provide a copy of any correspondence shared with Staff or notes of any discussions had with Staff subsequent to the referenced meeting. DR requested by Sarah Lange (sarah.lange@psc.mo.gov).

RESPONSE

Prepared By: Tom Hickman
Title: Regulatory Rate Specialist
Date: 07/21/2021

Subject to the Company's objection, no notes exist of any discussions had with Staff subsequent to the referenced meeting.

Lange, Sarah

Subject: 2nd Cost by Voltage Stipulation Meeting
Location: Skype Meeting

Start: Fri 6/26/2020 2:30 PM
End: Fri 6/26/2020 4:00 PM
Show Time As: Tentative

Recurrence: (none)

Organizer: Hickman, Thomas

All,

Updating the meeting invitation with materials for the meeting. Feel free to forward along to anyone not included on the outlook item. Please let me know if you have any trouble with these files.

Thanks!

All,

This meeting is to serve as our June meeting in regards to the item in the stipulation in agreement (Number 41, sub point b.) to discuss data collection and retention policies around voltage level data.

Sarah, Robin, Caleb, and Geoff, please forward on to any other individuals within your organizations who would like to participate. I will be sure to distribute any handout materials for the meeting in advance of the meeting (PowerPoints or example files, etc.)

Please let me know if you have any questions leading up to this meeting.

Thanks!

.....

Join Skype Meeting

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Join by phone

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(314) 554-4025 (MO) English (United States)
(800) 258-2477 (MO) English (United States)
confline (MO) English (United States)

Find a local number

Conference ID: 77743451
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Utility Account	1364000-Poles-Towers-Fixtures	
Row Labels	Sum of Activity Quantity	Sum of Activity Cost
ANCHOR,COMPLETE W/ ROD,WIRE,ETC	592,195	113,426,739.42
CONCRETE AND STEEL FOUNDATIONS	1,813	71,199.54
CROSSARM ASSEMBLY,DOUBLE,DEAD-END	4,150	2,598,205.68
CROSSARM ASSEMBLY,OAK-SET	2,227	2,105,560.70
CROSSARM ASSEMBLY,WISHBONE,69KV	126	11,196.22
CROSSARM,12'-16'	11,752	2,116,665.88
CROSSARM,17'-29'	9,823	2,348,741.98
CROSSARM,6' AND LESS	177,126	5,774,866.77
CROSSARM,7'-11'	593,602	122,878,688.67
FENCING	12,816	68,519.57
Land-Easements	5	1,949,323.89
Miscellaneous Adjustment	79	82,466.81
Non-Unitized	753	9,676,823.96
PLATFORM,TRANSFORMER,16' & OVER	470	3,467,873.37
PLATFORM,TRANSFORMER,LESS THAN 16'	809	978,119.99
POLE,CONCRETE,35'	44	802.24
POLE,CONCRETE,75'	15	175,899.08
POLE,POWER,COMPOSITE, 90'	3	222,846.33
POLE,PWR,COMPOSITE,35FT,FIBGLS	2	22,791.86
POLE,PWR,COMPOSITE,40FT,FIBGLS	83	800,019.85
POLE,PWR,COMPOSITE,45FT,FIBGLS	105	3,917,019.73
POLE,PWR,COMPOSITE,50FT,FIBGLS	109	1,572,879.17
POLE,PWR,COMPOSITE,55FT,FIBGLS	90	1,668,377.73
POLE,PWR,COMPOSITE,60FT,FIBGLS	52	1,495,199.95
POLE,PWR,COMPOSITE,65FT,FIBGLS	133	1,905,886.62
POLE,PWR,COMPOSITE,70FT,FIBGLS	87	3,520,230.50
POLE,PWR,COMPOSITE,75FT,FIBGLS	77	1,738,569.99
POLE,PWR,COMPOSITE,80FT,FIBGLS	17	398,879.60
POLE,PWR,COMPOSITE,85FT,FIBGLS	7	225,103.90
POLE,PWR,COMPOSITE,95FT,FIBGLS	5	182,090.54
POLE,STEEL POLE, 71' - 79'	16	143,060.85
POLE,STEEL,100'-109'	3	43,335.66
POLE,STEEL,104'	1	32,595.08
POLE,STEEL,109'	1	39,925.27
POLE,STEEL,130'-139'	1	6,677.94
POLE,STEEL,25'	190	107,686.09
POLE,STEEL,35'	180	319,337.41
POLE,STEEL,40'	5	22,648.33
POLE,STEEL,45'	8	33,311.96
POLE,STEEL,50'	19	31,164.86

Count	Count	Count	Count	Count	Count
Number of each asset directly assignable derived from operational data					
>600	600	600 - 34 kV	34 kV	69 kV	115 kV
20	400		591,775		
			500	500	

Count	Count	Count	Count	Count	Count
Number of each asset allocated from operational data that has shared use between voltages					
>600	600	600 - 34 kV	34 kV	69 kV	115 kV
			800	13	

Count	Count	Count	Count	Count	Count
Number of each asset that based on operational data serves a single customer					
>600	600	600 - 34 kV	34 kV	69 kV	115 kV

Prorated Cost	Prorated Cost	Prorated Cost	Prorated Cost	Prorated Cost	Prorated Cost
Number of each asset directly assignable derived from operational data					
>600	600	600 - 34 kV	34 kV	69 kV	115 kV
$ 3,831	$ 76,614	$ -	$ 113,346,294	$ -	$ -
$ -	$ -	$ -	$ 19,636	$ 19,636	$ -
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Prorated Cost	Prorated Cost	Prorated Cost	Prorated Cost	Prorated Cost	Prorated Cost
Number of each asset allocated from operational data that has shared use between voltages					
>600	600	600 - 34 kV	34 kV	69 kV	115 kV
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Prorated Cost	Prorated Cost	Prorated Cost	Prorated Cost	Prorated Cost	Prorated Cost
Number of each asset that based on operational data serves a single customer					
>600	600	600 - 34 kV	34 kV	69 kV	115 kV
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Ameren
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Ameren Missouri ER 2019-0335 Stipulation Meeting 2
06/26/2020

Voltage Level - Data Collection and Retention Policies

Meeting Agenda

- Roll call/house keeping
- Stipulation overview
- Cost of Network Elements by Voltage
  - Historic
  - New (Smart Energy Plan)
  - Circuit Information Provided
- Questions on Remaining Stipulation Items

Voltage Level - Data Collection and Retention Policies

Roll Call/Basic Meeting Housekeeping

- Ameren Missouri
- Missouri Public Service Commission Staff
- Missouri Office of Public Counsel
- Please mute your mic/phone when not in the process of asking a question to eliminate background noise and ensure clarity for all participants.
- If you experience any technical difficulties or are unable to ask a question due to connection issues or otherwise, Tom Hickman will be loosely monitoring email throughout the course of the meeting. Feel free to email him at THickman@Ameren.com and he will do his best to accommodate.

Voltage Level - Data Collection and Retention Policies

Stipulation Overview

Ameren Missouri shall meet with Staff, OPC, and other interested Stakeholders in April 2020 to discuss data collection and retention policies around voltage level data, including but not limited to the following:

- *1. Cost of 600 V network elements;*
- *2. Cost of network between 600 V and 34 kV;*
- *3. Cost of 34 kV network;*
- *4. Cost of 69 kV network;*
- *5. Cost of 115 kV network;*
- *6. New customer-prepaid investments by voltage and rate schedule of customer;*
- *7. New meter investment by rate schedule;*
- *8. Service drop investment by rate schedule and by voltage;*
- *9. Transformer investment by rate schedule; and*
- *10. Customer load data by geographic area as may be useful in creation of costbased DSM programs.*

Ameren Missouri shall follow up with Staff, OPC, and other interested Stakeholders by the end of June 2020 regarding any outstanding questions on data collection and retention policies.

Cost of Network Elements by Voltage

Overview

- Conclusions from April Meeting
- Information on historic plant by voltage is not readily available and would take a significant amount of work to review and assign for all assets types. Some may be more able to be directly assigned, others may rely on operational data or even sample data.
- Expectation of additional information for new (Smart Energy Plan) spending.

Cost of Network Elements by Voltage

Historic Plant

- Sarah Lange provided a draft example of how data for historic plant might be broken out by voltage.
- Ameren reviewed this breakout and believes it to be a reasonable breakout and in many ways is the type of information we look to compile in reviewing our distribution plant allocators.
- There are, however, a few specific things to discuss:
  - There's a breakout of assets which serve a single customer in the example. This information is not information currently tracked or available on existing plant. The service account which tracks service to secondary customers is presumed to be assets that serve individual customers, but no additional tracking is available on other items, such as poles.
    - We want to better understand the purpose of requesting this information to see if we can address the concern with data that is available or to determine if there is justification that may make additional efforts to capture this information worth it. Is there a difference on historic plant compared to new plant? If historic plant, would attribute sampling be a possible way to meet the needs?
  - The example has assets broken out by specific voltages rather than by level of service as utilized in our CCOS.
    - There may be asset types which have had little to no activity since the original study in 2009. It's possible that through operational input, we would determine certain retirement unit assets to not require re-testing, but this would leave us with information available as Primary/Secondary/High Voltage. Is this an issue?

Cost of Network Elements by Voltage

New Plant (Smart Energy Plan)

- Ameren provided a document which included a sample of in service Smart Energy Plan projects broken down by voltage and including some additional information requested by Staff.
- One specific piece of information that was requested but Ameren is unable to provide is a breakout of the information for reserves. Due to the nature of composite depreciation, we don't track the requested information to the same detailed level and are unable to provide this breakdown on the reserves.
- Are there any questions or concerns with the format of the sample data provided?

Cost of Network Elements by Voltage

Circuit Information

- Staff requested a breakout of information by circuit which Ameren responded with to the extent data was available.
- Does Staff have any questions or concerns relating to this request?

Additional Stipulation Items

- In our April meeting, we explained the information for the following is generally available:
  - New customer-prepaid investment by rate schedule
  - New meter investment by rate schedule
  - Service drop investment by rate schedule and voltage
  - Transformer investment by rate schedule
  - Customer load data by geographic area as may be useful in creation of costbased DSM programs
- Are there any outstanding questions or concerns relating to those topics?


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Ameren Missouri's
Response to MPSC Data Request - MPSC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0104.9

Refer to company's response to DR 104.5. Please confirm whether the company operates any circuits below 2.4 kV. If the company does operate circuits below 2.24 kV please provide a list of such circuits and identify the voltage at which it operates, the length of each circuit underground and length of each circuit overhead. Please identify the number of customers served on each such circuit. Please identify the accounts to which assets associated with these circuits are recorded. Please provide any information available that quantifies the value of assets associated with these circuits. Data Request submitted by Sarah Lange (sarah.lange@psc.mo.gov).

RESPONSE

Prepared By: Tom Hickman
Title: Regulatory Rate Specialist
Date: 07/29/2021

The company does not operate circuits below 2.4 kV. The company does have overhead and underground conductor below 2.4 kV, but it is not identified as a circuit or feeder by a specific circuit or feeder number.

Ameren Missouri's
Response to MPSC Data Request - MPSC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0104.9

Refer to company's response to DR 104.5. Please confirm whether the company operates any circuits below 2.4 kV. If the company does operate circuits below 2.24 kV please provide a list of such circuits and identify the voltage at which it operates, the length of each circuit underground and length of each circuit overhead. Please identify the number of customers served on each such circuit. Please identify the accounts to which assets associated with these circuits are recorded. Please provide any information available that quantifies the value of assets associated with these circuits. Data Request submitted by Sarah Lange (sarah.lange@psc.mo.gov).

RESPONSE

Prepared By: Tom Hickman
Title: Regulatory Rate Specialist
Date: 07/29/2021

The company does not operate circuits below 2.4 kV. The company does have overhead and underground conductor below 2.4 kV, but it is not identified as a circuit or feeder by a specific circuit or feeder number.

Ameren Missouri's
Response to MPSC Data Request
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0104.9s1

Refer to company's response to DR 104.5. Please confirm whether the company operates any circuits below 2.4 kV. If the company does operate circuits below 2.24 kV please provide a list of such circuits and identify the voltage at which it operates, the length of each circuit underground and length of each circuit overhead. Please identify the number of customers served on each such circuit. Please identify the accounts to which assets associated with these circuits are recorded. Please provide any information available that quantifies the value of assets associated with these circuits. Data Request submitted by Sarah Lange (sarah.lange@psc.mo.gov).

RESPONSE: (Do not edit or delete this line or anything above this. Start typing your response right BELOW Date.)

Prepared By: Tom Hickman
Title: Regulatory Rate Specialist
Date: September 3, 2021

Based on conversations between Staff and the Company, the following supplemental information is being provided.

There would not be much mileage of overhead secondary circuit alone. Overhead secondary would most likely be collocated with overhead primary in the areas where primary exists. Secondary would exist in areas that have a higher customer density. Very little overhead secondary would exist in rural areas due to distance between customers. Based this assumption, a very rough guess of miles of overhead secondary would be a range 50% to 60% of the miles of overhead primary. Please note that this is a very subjective estimate, and as we get our secondary into the mapping system over time this information should be updated. The miles of underground secondary should be able to be derived fairly closely from the information on retirement units in the 367 accounts.

Ameren Missouri's
Response to MPSC Supplemental - MPSC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 104.9s2

Refer to company's response to DR 104.5. Please confirm whether the company operates any circuits below 2.4 kV. If the company does operate circuits below 2.24 kV please provide a list of such circuits and identify the voltage at which it operates, the length of each circuit underground and length of each circuit overhead. Please identify the number of customers served on each such circuit. Please identify the accounts to which assets associated with these circuits are recorded. Please provide any information available that quantifies the value of assets associated with these circuits.

RESPONSE

Prepared By: Tom Hickman
Title: Regulatory Rate Specialist
Date: 09/10/2021

Based on conversations between Staff and the Company, the following supplemental information is being provided.

Please see the attached excel file MPSC 104.9s2 Response.xlsx. Each tab contains the retirement units for the respective major which could be used for Secondary Voltages (600v and below). Please note, a few of these retirement units may have mixed used, but the majority would be used for secondary exclusively.

Ameren Missouri's
Response to MPSC Data Request - MPSC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0104.10

Refer to Lowery statement that "Regarding 104.6, the information that you indicate "surely must exist" does not exist absent developing it through substantial analysis that the Company is not required to do." Describe all analysis necessary to determine the number of conductors on each circuit and which circuits have communications cabling. Identify any database or repository of information within the Company's possession that contains information about how many physical cables are mounted on its defined circuits, and provide access to that data set. Data Request submitted by Sarah Lange (sarah.lange@psc.mo.gov).

RESPONSE

Prepared By: Tom Hickman
Title: Regulatory Rate Specialist
Date: 09/03/2021

Subject to the Company's objections, please see the response to DR MPSC 688.1 for information relating to the number of conductors for each circuit. As for the communication cable. Our GIS system has not been the master of the location of the communication cables. It has only been in the past year that there have been requests to create an intelligent cable feature to list the size and type of cable, and also models for the UG conductor being purchased with OPGW cable used as the neutral. We have mapped very little of either of these. The current communication cable has no relationship to the primary electrical cable, so cannot be tied to a circuit. As a result, a substantial analysis would be required to map this communication cable and to create relationships to the primary electrical cable.

Information relating to our defined circuits is contained within ESRI GIS. The amount of data contained within this database is substantial and would be very difficult to compile and transfer. There is a more commonly used read only viewing tool (AMV) used to view and understand the relational data that exists in this system. Ameren Missouri would propose to either provide onsite access to review information contained in this system or a remote session whereby this information could be presented and questions could be asked.

Ameren Missouri's
Response to MPSC Data Request - MPSC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0104.11

Refer to company's response to DR 104.9. Please provide any available information identifying the miles of system and/or number of devices and/or the value of such systems and/or devices and/or the retirement units and quantities of retirement units that operate below 2.4kV which are recorded in accounts 364 Poles, Towers, & Fixtures, 365 Overhead Conductors & Devices, 366 Underground Conduit, and/or 367 Underground Conductors & Devices. Please indicate the voltage and phase at which such assets operate, particularly distinguishing and quantifying assets that operate above 600 Volts from assets operating below 600 Volts, and assets operating at 600 Volts. Please identify the number of customers served at each level of voltage and phase. If full information is not available please provide the best information that is available. Data Request submitted by Sarah Lange (sarah.lange@psc.mo.gov).

RESPONSE

Prepared By: Tom Hickman
Title: Regulatory Rate Specialist
Date: 08/23/2021

Ameren Missouri does not have a complete mapping of assets below 2.4kV. A number of assets, as identified by retirement unit, may have a mixed use that can not be identified directly based on the retirement unit alone. Poles, for example, do not operate at a specific voltage but are viewed in Ameren's Class Cost of Service Study as related to the voltage of equipment attached. Poles are not specifically associated to conductors in Ameren Missouri's mapping. Certain types of conductor may be used for a range of secondary applications but could also be used for a mix of primary and secondary applications. As the secondary system is not mapped, Ameren Missouri is unable to specifically or directly identify how much of these mixed use retirement units are used at different voltages.

As a result of this, Ameren Missouri currently relies (and has historically relied upon) the results of a study, commonly referred to as the "Vandas Study", which allocated the cost of assets in those mixed use cases to Secondary, Primary, or High Voltages, based on a combination of methods, including but not limited to, sampling. Please see response to DR MPSC 635 detailing this study and including workpapers. This study represents Ameren Missouri's best available information on what voltage assets by specific retirement unit are operating at.

For information regarding number of customers served at each level of voltage and phase, please see response to DR MPSC 0681.1.

Ameren Missouri's
Response to MPSC Data Request - MPSC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0489

Please refer to the "Query Data" tab of Mr. Hickman's workpaper. Please explain in detail the location of each of the following assets as identified by asset ID, including whether it is the name on the account associated with the property and the rate schedule on which service is taken, if located on a customer's property. Please include a description of the utility property – for example, the circuit name and description, or description of the device or other utility plant, and identify the customer or customers served by said plant. DR requested by Sarah Lange (sarah.lange@psc.mo.gov).

vintage	asset id	retirement unit	activity quantity	activity cost	average cost
2005	1159775	SWITCH,DISCONNECT	1	$ 3,749,154	$ 3,749,154
2009	19484670	SWITCH,GANG-OPERATED,OVER 27,000V	1	$ 1,210,642	$ 1,210,642
2019	36315382	RECLOSER,14.4KV,1PHASE	1	$ 791,661	$ 791,661
2019	36315712	SWITCH,DISCONNECT,69KV	2	$ 1,103,138	$ 551,569
2019	38308211	RECLOSER,34KV,3PHASE	2	$ 960,659	$ 480,330
2019	37597222	SWITCHGEAR,PADMOUNT	1	$ 474,077	$ 474,077
2019	37763671	SWITCHGEAR,WALL,MOUNT	2	$ 897,388	$ 448,694
2006	3636641	SWITCH,GANG-OPERATED,OVER 27,000V	1	$ 439,666	$ 439,666
2018	36959622	SWITCHGEAR,WALL,MOUNT	2	$ 848,488	$ 424,244
2019	37091862	SWITCHGEAR,WALL,MOUNT	1	$ 420,932	$ 420,932
2017	32569871	RECLOSER,34KV,3PHASE	1	$ 379,860	$ 379,860
2008	7587100	SWITCH,GANG-OPERATED,OVER 27,000V	1	$ 345,052	$ 345,052

RESPONSE

Prepared By: Andy Wichmann
Title: Plant Accounting Supervisor
Date: 06/07/2021

The assets identified are electric distribution mass assets – 365 overhead conductors and devices and 367 underground conductors and devices. Assets in these groups are not identified by a specific location nor are they stored in the asset management system by location.

Ameren Missouri's
Response to MPSC Supplemental - MPSC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0489s1

Please refer to the "Query Data" tab of Mr. Hickman's workpaper. Please explain in detail the location of each of the following assets as identified by asset ID, including whether it is the name on the account associated with the property and the rate schedule on which service is taken, if located on a customer's property. Please include a description of the utility property – for example, the circuit name and description, or description of the device or other utility plant, and identify the customer or customers served by said plant. DR requested by Sarah Lange (sarah.lange@psc.mo.gov).

vintage	asset id	retirement unit	activity quantity	activity cost	average cost
2005	1159775	SWITCH,DISCONNECT	1$	3,749,154	$ 3,749,154
2009	19484670	SWITCH,GANG-OPERATED,OVER 27,000V	1$	1,210,642	$ 1,210,642
2019	36315382	RECLOSER,14.4KV,1PHASE	1$	791,661	$ 791,661
2019	36315712	SWITCH,DISCONNECT,69KV	2$	1,103,138	$ 551,569
2019	38308211	RECLOSER,34KV,3PHASE	2$	960,659	$ 480,330
2019	37597222	SWITCHGEAR,PADMOUNT	1$	474,077	$ 474,077
2019	37763671	SWITCHGEAR,WALL,MOUNT	2$	897,388	$ 448,694
2006	3636641	SWITCH,GANG-OPERATED,OVER 27,000V	1$	439,666	$ 439,666
2018	36959622	SWITCHGEAR,WALL,MOUNT	2$	848,488	$ 424,244
2019	37091862	SWITCHGEAR,WALL,MOUNT	1$	420,932	$ 420,932
2017	32569871	RECLOSER,34KV,3PHASE	1$	379,860	$ 379,860
2008	7587100	SWITCH,GANG-OPERATED,OVER 27,000V	1$	345,052	$ 345,052

RESPONSE

Prepared By: Mitch Lansford
Title: Director Regulatory Accounting
Date: July 20, 2021

This supplemental response provides further details as to the accounting requirements for categories of mass property, which demonstrates that the location associated with the above costs is not known.

The following FERC Accounts are accounted for as mass property at Ameren Missouri. Note that the excerpt from the Company's records in this data request includes a column heading of "Retirement Unit". This column heading would be more appropriately named "Description of Retirement Unit or Category of Mass Property"; however, such a naming convention would not work in our existing systems. Mass property is appropriate when there are large quantities of lower value investments, such as poles, wires, pipe, meters, etc:

- 364 Poles, towers and fixtures
- 365 Overhead conductors and devices
- 366 Underground conduit
- 367 Underground conductors and devices
- 368 Line transformers
- 369 Services
- 370 Meters
- 373 Street lighting and signal systems

The FERC Uniform System of Accounts ("USoA") clarifies the difference in requirements for those investments accounted for as a retirement unit versus those that are categories of mass property as follows:

8. *Continuing plant inventory record* means company plant records for retirement units and mass property that provide, as either a single record, or in separate records readily obtainable by references made in a single record, the following information:

A. For each retirement unit;

(1) The name or description of the unit, or both;

(2) The location of the unit;

(3) The date the unit was placed in service;

(4) The cost of the unit as set forth in Plant Instructions 2 and 3 of this part; and

(5) The plant control account to which the cost of the units is charged; and

B. For each category of mass property;

(1) A general description of the property and quantity;

(2) The quantity placed in service by vintage year;

(3) The average cost as set forth in Plant Instructions 2 and 3 of this part; and

(4) The plant control account to which the costs are charged.

Each of the selections made by Staff in this Data Request are investments accounted for as mass property. Accordingly, the information available to the Company and Staff is items B.(1)-(4) above. No location information exists in the Company's property accounting records for mass property investments, nor is it required to be maintained by the FERC USoA.

When a retirement is processed for a mass property account, the original cost of plant is reduced by the quantity to be retired and at the average cost of a historical investment. The related vintage years and asset ID's to be retired are determined based on the depreciation studies, rates, and curves implemented as part of a rate case. Company field personnel identify the quantity to be retired and the remainder of the process of recording the related retirement entry is system driven. The Company uses a software referred to as PowerPlan to process this information. This software is common within the utilities industry.

The typical journal entry for any retirement (when using group depreciation) is to reduce the original cost of plant and reserve by the same amount. This results in no change to rate base. If retirements were to occur earlier or later than expected, subsequent adjustments to depreciation rates would be proposed as part of a depreciation study.

Ameren Missouri's
Response to MPSC Data Request - MPSC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0533

Consider the following hypothetical customers. For each, please provide an itemized construction estimate including a detailed list of the specific materials that would be expected to be used for that circumstance, the current cost of those materials, and the expected installation cost of those materials. Please identify those materials with labeling or reference numbers consistent with the descriptions used in the continuing property catalog.

1. A 3000 sq ft house with no gas or propane, located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

2. A 1000 sq ft house with propane located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

3. A 3000 sq ft house with no gas or propane, located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

4. A 1000 sq ft house with propane located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

5. A 5000 sq ft commercial office with no gas or propane, located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

6. A 1000 sq ft commercial office with propane located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

7. A 5000 sq ft commercial office with no gas or propane, located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

8. A 1000 sq ft commercial office with propane located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

9. A 1 MW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

10. A 1 MW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

11. A 5 MW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

12. A 5 MW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

13. A 10 MW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

14. A 10 MW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along

an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

15. A 20MW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

16. A 20MW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

17. A 25 kW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

18. A 25 kW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

19. A 50 kW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

20. A 50 kW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

21. A 75 kW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

22. A 75 kW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No

additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

23. A 100 kW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

24. A 100 kW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

25. A 200 kW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

26. A 200 kW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

27. A 500 kW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

28. A 500 kW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

29. A 750 kW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

30. A 750 kW customer located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area. Underground distribution and service facilities are requested.

Sarah Lange
(sarah.lange@psc.mo.gov)

RESPONSE

Prepared By: Tom Hickman
Title: Regulatory Rate Specialist
Date: 8/17/2021

CONFIDENTIAL
20 CSR 4240-2.135(2)(A)1
ATTACHMENT ONLY

Subject to the Company's objection, a sample of new business projects to provide as representative as was reasonable of the cost of connecting customers of different sizes was developed. Please see the attached excel workbooks which include AP and PD (Accounts Payable and Payroll Distribution) cost information by work order, representing the cost of installation, and EMPRV data by work order, representing the cost of materials, for this sample.

Ameren Missouri's
Response to MPSC Supplemental - MPSC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 533s1

Consider the following hypothetical customers. For each, please provide an itemized construction estimate including a detailed list of the specific materials that would be expected to be used for that circumstance, the current cost of those materials, and the expected installation cost of those materials. Please identify those materials with labeling or reference numbers consistent with the descriptions used in the continuing property catalog.

1. A 3000 sq ft house with no gas or propane, located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

2. A 1000 sq ft house with propane located 1 mile from a suitable point of interconnection with existing distribution infrastructure with sufficient capacity to serve the load. The line will be placed along an existing road with no other infrastructure present, and no surface or sub-surface issues. No additional load is expected to materialize in the area.

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RESPONSE

Prepared By: Tom Hickman
Title: Regulatory Rate Specialist
Date: 09/10/2021

Subject to the Company's objections,

Based on conversations between Staff and the Company, the following supplemental information is being provided to address additional analysis the Company performed to show relative cost differences between circuits at different major voltages.

The following estimates should be viewed as very high level estimates meant to show relative costs between different voltages. Very few, if any, new circuits would be this clean to install or have this exact cost. These costs are meant to be demonstrative to show a relative relationship. Please note, cost of secondary overhead was not provided. There is very little new secondary overhead being built and in many cases, secondary overhead would share assets with the nearby primary system, making secondary difficult to model in this same way.

1 mile of 1/0 AAAC single phases (4 kV or 12 kV)

Assumptions: Poles at 200 foot spacing, being built new and cold, no tree trimming, no need for soft dig, no rock holes, no flagging required, no secondary, services or streetlights and truck accessible.

Costs: $67,103.00

1 mile of 3 Phase 556AA with 1/0 AAAC neutral (4 kV or 12 kV)

Assumptions: Poles at 200 foot spacing, being built new and cold, no tree trimming, no need for soft dig, no rock holes, no flagging required, no secondary, services or streetlights and truck accessible.

Costs: $188,989.00

1 mile of 34kV 954 ACSR circuit with 1/0 AAAC static

Assumptions: No underbuild, poles at 200 foot spacing, being built new and cold, no tree trimming, no need for soft dig, no rock holes, no flagging required, no secondary, services or streetlights and truck accessible.

Costs: $440,816.00

Ameren Missouri's
Response to Staff Data Request - MSPC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0592

Data Request Information Refer to the "Corrected Non-Unanimous Stipulation and Agreement" in ER-2019-0335, providing "Upon request by Staff, the Company shall make available determinants associated with the potential creation of a coincident peak demand charge for all classes, which may be based on either fifteen (15) minute or one (1) hour readings. Data shall be made available in the form of hourly usage per customer and aggregate hourly usage by rate schedule with and without applicable metering or voltage adjustments." For each month for which data is available, and for each rate schedule, please provide hourly usage per customer and aggregate hourly usage by rate schedule with and without applicable metering or voltage adjustments. Please indicate whether data provided is based on load research data or gross AMI meter data, and whether such load data is derived from load research sample customer, aggregated AMI readings, or some other source. Sarah Lange (sarah.lange@psc.mo.gov)

RESPONSE

Prepared By: Prasenjit Shil
Title: Load Forecasting Manager
Date: 07/20/2021

Please refer to the attached spreadsheet "Per_Customer_Usage_Response_Data.xlsx" for the data requested. Please see below for the descriptions on each tab in the spreadsheet.

- *The tab named "USAGE":* This tab contains hourly aggregated rate class level estimated usage between 01/01/2020 and 04/30/2021 based on calendar month. Estimated usage for various classes are derived from the Load Research samples except for large primary service or LPS (11M) class which uses census analysis. Hourly usage for the LPS customers are directly sourced from Ameren Missouri's billing system.
    - While usage for residential (1M), small general service or SGS (2M), and large general service or LGS (3M) are estimated at the secondary voltage level, usage for small primary service or SPS (4M) class is provided at the primary voltage level. Load research estimates for SPS class are aggregated at the primarily voltage level. Usage in large primary service (11M) are provided at various delivery voltage levels namely primary, sub-transmission and transmission.
- *The tab named "CUSTOMER_COUNT":* This tab contains monthly customer counts by primary month.
- *The tab named "PER_CUST_USAGE":* This tab contains estimated usage per-customer.

Ameren Missouri's
Response to MPSC Supplemental - MPSC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0592s1

Data Request Information Refer to the "Corrected Non-Unanimous Stipulation and Agreement" in ER-2019-0335, providing "Upon request by Staff, the Company shall make available determinants associated with the potential creation of a coincident peak demand charge for all classes, which may be based on either fifteen (15) minute or one (1) hour readings. Data shall be made available in the form of hourly usage per customer and aggregate hourly usage by rate schedule with and without applicable metering or voltage adjustments." For each month for which data is available, and for each rate schedule, please provide hourly usage per customer and aggregate hourly usage by rate schedule with and without applicable metering or voltage adjustments. Please indicate whether data provided is based on load research data or gross AMI meter data, and whether such load data is derived from load research sample customer, aggregated AMI readings, or some other source. Sarah Lange (sarah.lange@psc.mo.gov)

RESPONSE

Prepared By: Prasenjit Shil
Title: Load Forecasting Manager
Date: 9/3/2021

Pursuant to topics of discussion raised by Staff at the August 24 discovery conference, the following analysis is being provided as a supplemental response to this data request. This analysis is designed to create potential billing units for a "peak window" or "peak period" demand charge for each rate class, and includes subdivision of the LPS class by the voltage at which customers are served (i.e., primary, sub-transmission (high voltage), or transmission). This data is based on Ameren Missouri's load research program. The data to bill such a charge does not currently exist for Ameren Missouri customers without an AMI meter, and Ameren Missouri has not attempted to determine its billing system readiness or capability to program and bill such a charge at the current time. The peak period used for analysis of this demand charge is 3 to 7 pm on non-holiday weekdays, consistent with the current peak period associated with the energy charge in the residential Ultimate Savers rate option, and also with the proposed peak period for the residential Smart Savers rate option. All demand data used for this analysis is based on an hourly measurement of customer demand within the defined peak period.

Please refer to the attached spreadsheet titled "RC_PEAK_ANALYSIS_CONFIDENTIAL" for this discussion. The spreadsheet contains raw data, analysis and summary. Please note that this

spreadsheet contains customer data and is considered confidential. The following table describes various tabs in the attached spreadsheet. Unit for the reported load data is in kW.

TAB_NAME	Description
ATTRIBUTES_LOOKUP	Non-LPS customers' classification by rate class, strata
LPS_ATTRIBUTES_LOOKUP	LPS customer classification by rate class, strata, month
NON_LPS_RAW_TOP_10	Non-LPS customers' top 10 peaks by month
STRATA_WEIGHT	Strata weight by rate class
CUSTOMER_COUNT	AMMO 2020 customer count by rate class
NON_LPS_PEAK	Sum of non-LPS customer peaks
LPS_PEAK	Sum of LPS customer peaks
SUMMARY	Combined summary of non-LPS classes and LPS class

The analysis started by identifying monthly peak between 3PM and 7PM for each available customer in the load research sample for various rate schedules. Ameren utilized Oracle Lodestar (software tool used for load research) to report the hourly and peak data from the validated load research sample. Since the load research sample is stratified, Ameren also utilized the strata weights to estimate overall peak. Sample data was used for all the rate schedules except for Large Primary Service (LPS) since the Company is able to collect interval data for all of LPS customers for billing purpose.

This analysis utilized "Mean per Unit" (MPU) methodology to estimate the overall non coincident peak during the window of analysis from the sample data for all the rate classes except for LPS. MPU methodology is a simple load research technique where sample average load is grossed up to the class level by multiplying by the overall class population. In this analysis, a weighted average peak was calculated using the average peak demand per customer for each strata and the corresponding strata weights. The sample weighted average was then multiplied by the customer count (class population) for December 2020 to achieve overall estimated demand. The analysis is conducted for all of 12 months in the test year.

For the LPS class, overall non-coincident peak between 3PM and 7PM was determined by simply aggregating individual customer peak during the specified time window. This response also indicates the voltage level for each LPS customer and reports estimated non-coincident peaks during the said time window by such voltage class.

Ameren Missouri's
Response to MPSC Data Request - MPSC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0633

Refer to tab "AMR Meter Costs" of Hickman workpaper "Ameren-UE_DIR_004_Hickman-Att-MO ECCOS_2021 Final". Please provide the number of meters of each type used to serve each class. In the alternative, please provide a "Meter Code" for each line of the AMR Meter Costs tab that corresponds to the "Meter Code" column on the tab "mo_elec-rc" in the spreadsheet provided in response to DR 105.1. DR requested by Sarah Lange (sarah.lange@psc.mo.gov).

RESPONSE

Prepared By: Tom Hickman
Title: Regulatory Rate Specialist
Date: 8/13/2021

Please see the attached excel document "MPSC 633 Response.xlsx". This response includes information on both AMR and AMI meters. Please note, to complete the response, additional information on each meter was required. A significant portion of the cost of an installed meter relates to the Current Transformers and Potential Transformers. Additional fields of data in the listing of meters was required to map specific meters to specific costs (as were listed on the Meter Costs tabs of the referenced workpaper). The attached listing is current as of 7/16/2021, so it will not match up with the original listing of meters by customer class. This is due to the fact that this information is available to be pulled at a point in time but can't be replicated back to a previous date.

Also note, the meter costs presented within may not be exact to every specific CT and PT size, but per discussions with individuals with significant metering experience, the costs used are representative and little variance would be seen by using exact CT and PT costs for every specific scenario. Further, the costs presented are a current replacement cost. Due to the number of models and various prices meters could be individually purchased at over a history of years, Ameren's approach is to treat every meter at its marginal replacement cost today in developing allocations.

Finally, one piece of providing the cost of meters had to be estimated. Ameren does not have records specific to whether a meter is an indoor switchgear/switchboard installation or an

outdoor cluster installation, however this has an impact on the cost. The attached spreadsheet includes a column of both indoor costs and outdoor costs (where applicable). Based on an estimate by individuals with experience in Ameren's metering groups, we used a ratio of 1/3 indoor and 2/3 outdoor. The cost of each meter that has both and indoor cost and outdoor cost is represented as a weighted factor between those costs.

Ameren Missouri's
Response to MPSC Data Request - MPSC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0664

By account, and by retirement unit, please identify the assets used for communication and/or operation of remote equipment on the distribution system, including intangible assets. By account, please identify the expenses and revenues associated with the operation and maintenance of these assets, including, if known, property taxes associated with these assets. DR requested by Sarah Lange (sarah.lange@psc.mo.gov).

RESPONSE

Prepared By: Tom Hickman
Title: Regulatory Rate Specialist
Date: July 30, 2021

Subject to the Company's objection, communications equipment is accounted for in FERC Major 397. Please refer to response to DR MPSC 0591 for the specific retirement units included within this account. Associated O&M expenses would be accounted for in 935003 (Admin and Mtce – Communications Equipment) and 930227 (Operations of Communication Equipment) and associated revenues would be accounted for in 454008. A breakdown of property taxes for these specific assets is unavailable.

Ameren Missouri's
Response to MPSC Data Request - MPSC
ER-2021-0240
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0664.1

Refer to response to DR 555, indicating that "Cable, fiber optic," and "cable and wire, control" are typically used for communications purposes. Please supplement the Company's response to DR 664 to identify assets such as those identified in DR 555 that are not recorded in account 397, or clarify what was meant by the response to DR 555 and state whether and in what amount assets consistent with this clarification are found outside account 397. Data Request submitted by Sarah Lange (sarah.lange@psc.mo.gov).

RESPONSE

Prepared By: Paul Mertens
Title: Manager Plant Accounting
Date: September 8, 2021

For transmission lines, fiber optic cable is used as shield wire for transmission lines. Additionally, the cable can be used for communications, but is recorded in transmission accounts because it serves as shield wire, protecting transmission conductor. These dual purpose assets are accounted for as transmission assets.

For distribution lines, the OPGW also serves a dual purpose, lightning protection for the distribution lines and high speed fiber communications backhaul from substation sites and private LTE transmitter sites. These dual purpose assets are accounted for as distribution assets.

APPENDIX 3

Pages 50 - 53

HAVE BEEN DEEMED

CONFIDENTIAL

IN THEIR ENTIRETY